

CLEAN COPY OF THE CLAIMS:

1. [CURRENTLY AMENDED] Insulated Metal Substrate (IMS) Control device for supplying an electric motor with comprising:

an inverter of at least two-phases;

an IMS metal path on at least two of the at least two phases on the inverter power circuit and in series with a motor phase;

a thermal sensor in thermal communication with the metal path to measure the temperature of the metal path and a temperature of power transistors of the control device.

2. [CURRENTLY AMENDED] Insulated Metal Substrate (IMS) Control device for supplying an electric motor with comprising:

a DC controller;

a metal path of the controller formed in IMS technology on a controller card and in series with a motor armature;

a thermal sensor in thermal communication with the metal path to perform the measure of its temperature.

3. [CURRENTLY AMENDED] Insulated Metal Substrate (IMS) Control device for supplying power to an electric motor comprising:

an integrated power module;

at least one metal path in series with at least one of power devices and an external connection terminal;

a thermal sensor in thermal communication with the metal path to measure its temperature.

4. [CURRENTLY AMENDED] Process for measuring the phase currents of an electric motor power supply comprising:

measuring the temperature of at least one Insulated Metal Substrate (IMS) metal path as elongation of a connection path between power or adduction devices towards outside;

compensating for a voltage drop due to thermal drift of the metal path's resistivity through software computation; and thereby

having the exact phase current measure.

5. [CURRENTLY AMENDED] Process according to claim 4 further comprising measuring the output current of a Power Semiconductor Module by measuring the temperature of at least one of an IMS metal path and a Direct Bonded Copper (DBC) metal path as elongation of a connection path between power or adduction devices towards outside and for compensating the voltage drop due to thermal drift of metal path resistivity through software computation and then having the exact phase current measure.